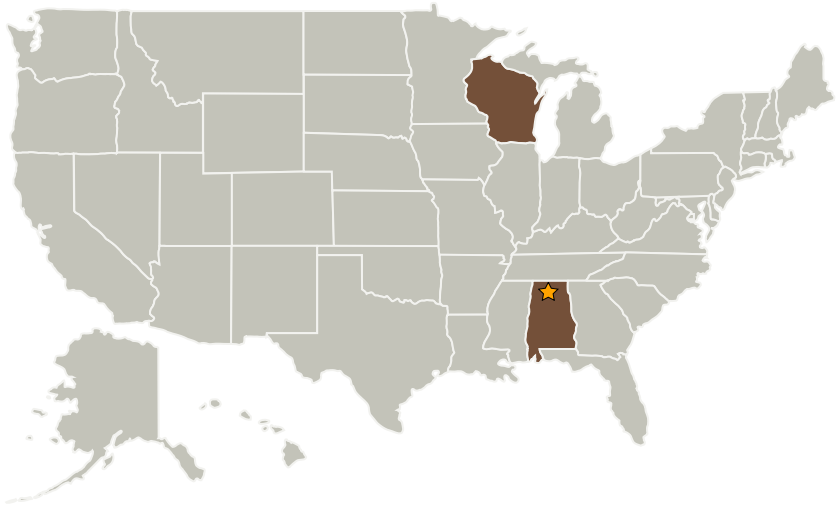
Improved Lunar and Martian Regolith Simulant Production, Phase II

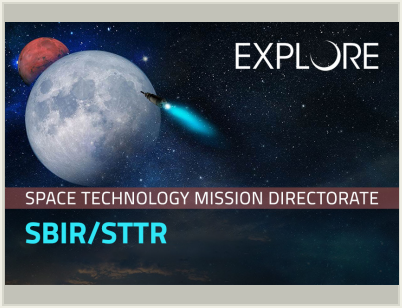
Completed Technology Project (2005 - 2007)

Project Introduction

The technical objective of the Phase II project is to provide a more complete investigation of the long-term needs of the simulant community based on the updated NASA outline for exploration, including potential landing site designations, the types of technologies currently funded for research, and timelines for future development. Using this information, a number of prototype simulants will be created and analyzed for their ability to meet individual application requirements. If successful, each prototype simulant could then be produced on a larger scale through a Phase III contract or by a privately funded commercial effort. The current simulants to be addressed by the Phase II include a spherical glass inclusion JSC-1a derivative for improved physical lunar mare characteristics, a terrestrially produced lunar agglutinate inclusion JSC-1a derivative for true chemical and mechanical property simulation, a lunar highlands simulant for simulation of over 80% of the lunar surface, and improved JSC Mars-1a simulant to meet the immediate needs for Martian experimentation and testing. We anticipate that through these four prototypes, the majority of the needs of the scientific and engineering communities can be met with a high degree of fidelity, improving NASA's ability to successfully explore the Moon and Mars.

Primary U.S. Work Locations and Key Partners





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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center (MSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Marshall Space Flight Center(MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
Orbital Technologies Corporation	Supporting Organization	Industry Women-Owned Small Business (WOSB)	Madison, Wisconsin

Primary U.S. Work Locations	
Alabama	Wisconsin

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.4 Environmental Monitoring, Safety, and Emergency Response
    - TX06.4.4 Remediation